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IS 11750 (1986): Brush, fitch, flat with long handle [CHD
24: Brushware]



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IS : 11750 - 1986

Indian Standard
SPECIFICATION FOR
BRUSH FITCH, FLAT, WITH
LONG HANDLE

UDC 687.922



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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 3

March 1987

**AMENDMENT NO. 1 MAY 2002
TO
IS 11750 : 1986 SPECIFICATION FOR BRUSH FITCH,
FLAT, WITH LONG HANDLE**

(*Page 3 , clause 0.3*) — Substitute the following for the existing:

'0.3 Fitch brushes with bristles as filling material are suitable for oil painting, specially upon canvas or rough surfaces.'

(*Page 4, clause 3*) — Delete the clause and renumber the subsequent clauses.

(*Page 4, clause 4.1*) — Delete the words 'Each grade of'.

(*Page 4, clause 5.1.1.1*) — Substitute the following for the existing:

'5.1.1.1 Selected, soft or stiff/semi-stiff white bristles of natural, uniform colour and properly straightened. As regards colour, lustre, stiffness, flexibility and fineness of the filling materials, these shall match those used in the approved tender sample.'

(*Page 4, clause 5.1.1.2*) — Delete.

(*Page 4, clause 5.1.1.3*) — Delete.

(CHD 24)

**AMENDMENT NO. 2 SEPTEMBER 2004
TO
IS 11750 : 1986 SPECIFICATION FOR
BRUSH FITCH, FLAT WITH LONG HANDLE**

(*Page 8, clause 6.1*) — Substitute 'Lindane 6.5% DP (*see* IS 14834 : 2000*) or methyl parathion 2% DP (*see* IS 8960 : 1978‡) for 'DDT dusting powder (*see* IS : 564 - 1975*)'.

(*Page 8, footnote marked '***') — Substitute the following for the existing footnote:

'*Lindane dusting powder — Specification '

(*Page 8, footnotes*) — Insert the following footnote at the end:

‡Specification for methyl parathion dusting powders '

(CHD 24)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR BRUSH FITCH, FLAT, WITH LONG HANDLE

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(Continued on page 2)

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Indian Standard

SPECIFICATION FOR BRUSH FITCH, FLAT, WITH LONG HANDLE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 April 1986, after the draft finalized by the Brushware Sectional Committee had been approved by the Chemical Division Council.

0.2 Brushes, flat fitch with long handle are used for studio work by art designers and sign painters. In this type of brushes, the filling materials being short in protrusion give greater springiness and elasticity to the brush. And by virtue of being flat at the tips, this type of brushes are found more suitable for broad letter writing and figure painting jobs than the round type of artists' or lettering brushes.

0.3 Fitch brushes with bristles as filling material are suitable for oil painting, specially upon canvas or rough surface. Fitch brushes with mon-goose hair as filling material are used for working with water colours and upon smooth or delicate ground.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final values, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified values in this standard.

1. SCOPE

1.1 This standard prescribes the requirements, methods of test and sampling for brushes fitch, flat with long handle.

2. TERMINOLOGY

2.1 For the purpose of this standard, definitions given in IS : 5060-1969†, IS : 707-1960‡, and the one given below shall apply.

*Rules for rounding off numerical values (*revised*).

†Glossary of terms used in brushware industry.

‡Glossary of terms applicable to timber technology and utilization (*second revision*).

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2.1.1 Approved Tender Sample — The sample accepted by the indenter or inspection authority as basis of supply. When a sample is tested and approved by the purchaser or an inspection authority, the results of such tests as will permit the supplier to meet the limits imposed by the specification for deliveries shall be made available to the supplier.

3. GRADES

3.1 Brushes fitch shall be of the following two grades, depending on the nature of the filling material.

- a) **GRADE 1** — with white bristles, and
- b) **GRADE 2** — with mongoose hair.

4. SIZES

4.1 Each grade of brushes fitch shall have 14 sizes as given in Table 1.

5. REQUIREMENTS

5.1 Materials — The brushes shall be manufactured from the following material.

5.1.1 Filling Materials

5.1.1.1 For grade 1 — Selected, soft or stiff/semi-stiff white bristles of natural, uniform colour and properly straightened.

5.1.1.2 For grade 2 — Selected mongoose hair of natural colour and free from adulterants.

5.1.1.3 As regards colour, lustre, stiffness, flexibility and fineness of the filling materials, these shall match those used in the approved tender sample.

5.1.2 Timber — Any of the timber species listed in Appendix A shall be used in the manufacture of handles of the brushes.

5.1.2.1 The timber shall be reasonably straight-grained and well seasoned to a moisture content not exceeding 15 percent when tested by the moisture meter or in case of dispute by the over-dry method given in Appendix B.

5.1.2.2 The timber shall be free from brashness, any kind of biological or non-biological deterioration, insect attack, centre-heart (pith), knots except live pin knots, cracks, warp and any other defect which may reduce the life of the brush or affect its utility.

TABLE 1 REQUIREMENTS FOR BRUSHES, FITCH, FLAT

(Clauses 4.1 and 5.2.1.1)

All measurements are in mm only

Sl. No.	Size of Brush No.	FILLING MATERIAL			FERRULES			HANDLE	
		Protrusion (Min) A		Anchorage Inside Ferrule (Min) B	Diameter at Bottom (Internal) C	Width at Top (Internal) D	Thickness at Top E	Length F	Length out of Ferrule G
		Type 1	Type 2						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i)	1	10	10	20	3	5	2	40	230
ii)	2	10	10	20	4	6	2	40	230
iii)	3	12	12	20	5	7	3	40	230
iv)	4	15	12	20	5	8	3	40	230
v)	5	15	15	20	6	9	3	45	230
vi)	6	18	15	20	7	11	4	45	230
vii)	7	20	20	20	8	12	4	45	230
viii)	8	20	20	25	9	13	4	50	230
ix)	9	25	25	25	9	14	5	50	240
x)	10	30	25	25	10	15	5	50	240
xi)	11	30	30	25	11	16	5	55	240
xii)	12	30	30	25	12	18	6	55	250
xiii)	14	35	35	25	14	22	7	60	250
xiv)	16	38	35	25	16	25	8	60	250

5.1.3 Ferrule — The ferrule shall be flat at the top and round at the bottom. The ferrule shall be seamless, nickel-plated brass and in case of tin plate it shall be lapped and soldered. Ferrule shall be made of 0.27 to 0.31 mm thick nickel-plated brass sheet or tin plate.

5.1.4 Cement — Any cement suitable for firm anchorage of the filling material inside the ferrule shall be used. The anchorage shall satisfy the pull test prescribed in 6.1.

5.1.4.1 In no case the setting cement shall appear out of the ferrule.

5.2 Dimensions and Tolerances

5.2.1 Dimensions

5.2.1.1 Brushes, flat fitch shall conform to the dimensions given in Table 1.

5.2.2 Tolerances — The tolerance on the linear dimensions shall be as follows :

<i>Nominal Dimension</i>	<i>Tolerance</i>
mm	mm
Up to 15	± 1.0
Over 15 but below 40	± 2.0
40 and above	± 3.0

Tolerance for the length of filling material out of the ferrule shall be $\begin{matrix} +2 \\ -0 \end{matrix}$.

5.2.3 The solid dressing of the filling materials shall conform to those used in the approved tender sample.

5.3 Manufacture

5.3.1 Brushes, flat fitch shall correspond to the shape and design as shown in Fig. 1.

5.3.2 Working Edge — The tip of the brushes shall be flat, thin and of even edge.

5.3.3 The ferrule shall be fully filled with the filling material and there shall be no gap at the mouth of the ferrule. This shall be ascertained by pressing the filling material at the mouth of the ferrule.

5.4 Workmanship and Finish

5.4.1 The ferrule shall be free from sharp edges.

5.4.2 The handles shall be neatly turned or shaped to conform to the design shown in Fig. 1. The handles shall be finished smooth, suitably varnished or lacquered, clear or coloured as agreed to between the supplier and the purchaser.

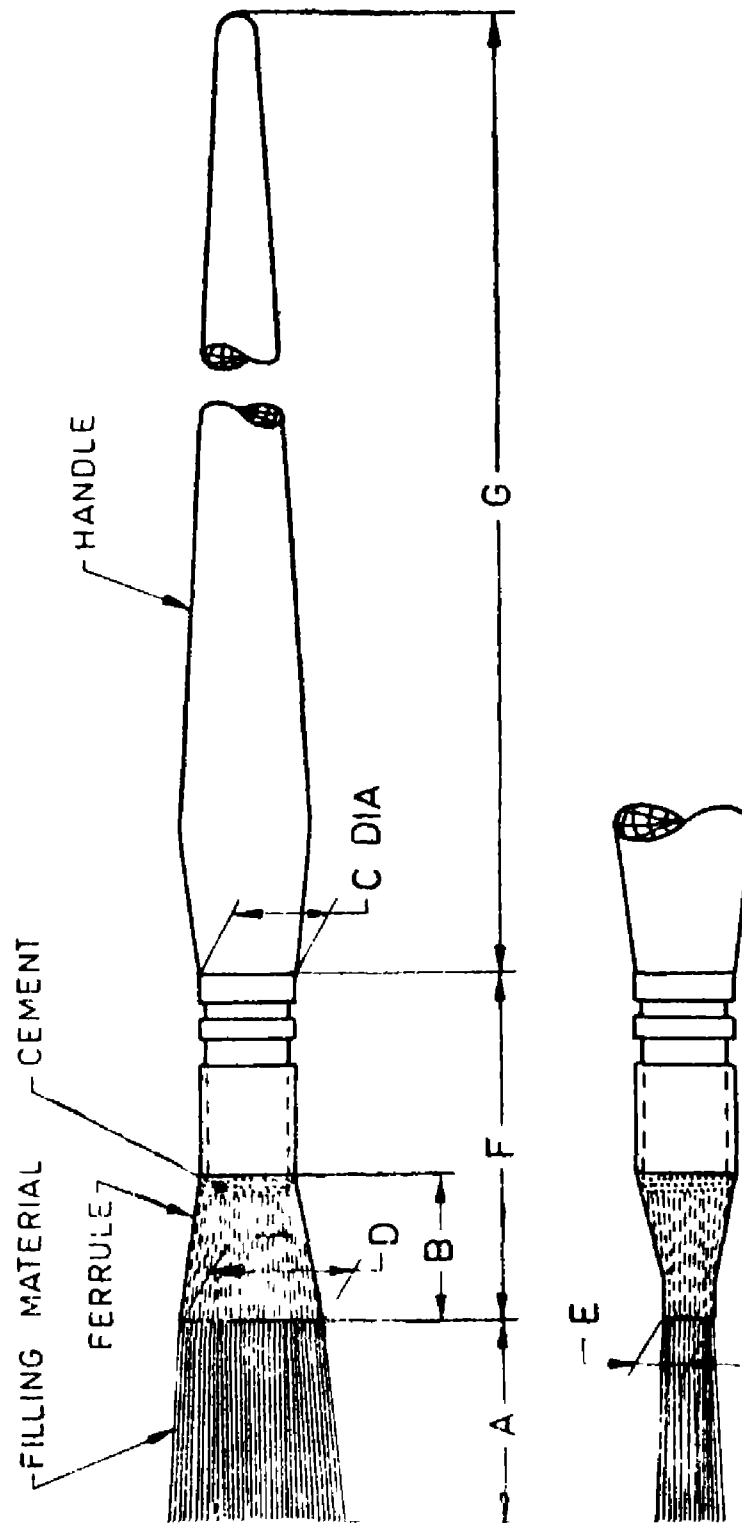


FIG. 1 BRUSH FITCH, FLAT, WITH LONG HANDLE

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5.4.3 The handles shall be tight-fitted by clinching at the round-end of the ferrule.

5.4.4 In general workmanship and finish, the brushes shall match the approved tender sample.

6. PRESERVATION

6.1 The filling material of the brushes shall be liberally dusted before packing, with a mixture of 5 parts (by mass) of DDT dusting powder (*see* IS : 564-1975*) and 95 parts (by mass) of French chalk (*see* IS : 380-1978†). Alternatively, naphthalene balls may be used in the packing box for the brushes.

7. PACKING AND MARKING

7.1 Packing — The brushes shall be packed as agreed to between the purchaser and the supplier.

7.2 Marking — Unless otherwise agreed to between the purchaser and the supplier, each brush shall be legibly and indelibly marked or stamped with the manufacturer's name or recognized trade-mark, if any, the year of manufacture, the grade and size denomination and the warranty of the filling material of the brush.

7.2.1 The brush may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors may be obtained from the Indian Standards Institution.

8. TENDER SAMPLES AND SAMPLING

8.1 Tender Samples — The supplier shall submit four identical tender samples of brushes of each denomination and grade for approval.

8.1.1 The indenter or inspection authority shall retain one of the four approved tender samples against each item, till the completion of order.

8.2 Sampling — The method of drawing representative samples of the brushes and the criteria for conformity shall be as prescribed in Appendix C.

*Specification for DDT dusting powder (*second revision*).

†Specification for French chalk, technical (*second revision*).

9. TEST METHODS

9.1 Pull Test — The cement shall not fail when a small bunch of the filling material is subjected to a straight pull with thumb-and-finger grip.

9.2 Performance Test — The tuft end of the brush shall be dipped in water and withdrawn and then given a slight jerk. The tuft shall assume the shape as shown in Fig. 1.

APPENDIX A

(Clause 5.1.2)

SPECIES OF TIMBER FOR THE MANUFACTURE OF HANDLES FOR FITCH BRUSHES

A-1. The list of the species of timber approved for the manufacture of handles for fitch brush is given below :

STANDARD TRADE NAME		BOTANICAL NAME
Roman	Devanagari	
aini	ऐनी	<i>Artocarpus hirsuta</i> Lamk., fam. Moraceae
banati	बनाती	<i>Lophopetalum wightianum</i> Arn., fam. Celastraceae
bijasal	बीजसाल	<i>Pterocarpus marsupium</i> Roxb., fam. Leguminosae
champak	चम्पक	<i>Michelia champaca</i> Linn., fam. Magnoliaceae
chickrassi	चिकरासी	<i>Chukrasia tabularis</i> A. Juss., fam. Meliaceae
dhaman	धामन	<i>Grewia tilifolia</i> Vahl, fam. Tiliaceae
gamari (gumhar)	गमारी (गुम्हार)	<i>Gmelina arborea</i> Roxb., fam. Verbenaceae
haldu	हल्दू	<i>Adina cordifolia</i> Hook f., fam. Rubiaceae
kaim	कैम	<i>Mitragyna parvifolia</i> (Roxb.) Korth., syn. <i>Stephegyne parvifolia</i> Korth., fam. Rubiaceae

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STANDARD TRADE NAME		BOTANICAL NAME
Roman	Devanagari	
kanju	कांजू	<i>Holoptelea integrifolia</i> Planch., fam. Ulmaceae
kathal	कटहल	<i>Artocarpus heterophyllus</i> Lamk., syn. <i>A. integrifolia</i> Linn. f., fam. Moraceae
kuthan	कूथन	<i>Hymenodictyon excelsum</i> Wall., fam. Rubiaceae
lambapatti	लम्बापत्ती	<i>Planchonella longipetiolatum</i> H.J. Lam., syn. <i>Sideroxylon longipetiolatum</i> King et Prain, fam. Sapotaceae
nim-chameli	नीम-चमेली	<i>Millingtonia hortensis</i> Linn f., fam. Bignoniaceae
kodapalai choupaini (piney)	कोडपलई चौपेनी (पिने)	<i>Kingiodendron pinnatum</i> (Roxb.) Harms, syn. <i>Hardwickia pinnata</i> Roxb., fam Leguminosae
toon	तून	<i>Toona ciliata</i> Roem., syn. <i>Cedrela toona</i> Roxb., fam. Meliaceae

APPENDIX B

(Clause 5.1.2.1)

DETERMINATION OF MOISTURE CONTENT FOR TIMBER USED IN BRUSHES, FLAT FITCH

B-1. TEST SPECIMEN

B-1.1 The entire block used in flat fitch brushes may form the test specimen for determination of moisture content or a coupon cut from the test specimen may, as well, be used for moisture content determination. When for any reason additional determination of moisture content is required, separate samples shall be prepared from the sample material as is used in preparing the test specimens. Smaller specimens may be used when deemed necessary. The test shall be carried out immediately after cutting the specimen.

B-2. PROCEDURE

B-2.1 Weigh accurately each test specimen. This specimen shall then be dried in a ventilated oven at a temperature of $105 \pm 2^\circ\text{C}$ until the mass becomes constant between two successive weighings made at an interval of not less than one hour.

B-3. CALCULATION

B-3.1 The moisture content, expressed as a percentage of the oven-dry mass is given by the formula :

$$\text{Moisture content, percent by mass} = \frac{M_1 - M_0}{M_0} \times 100$$

where

M_1 = initial mass in g of test specimen, and

M_0 = oven-dry mass in g of the test specimen.

A P P E N D I X C

(*Clause 8.2*)

**SAMPLING AND CRITERIA FOR CONFORMITY FOR
BRUSHES FLAT FITCH****C-1. SAMPLING**

C-1.1 Lot — In any consignment, all the brushes of the same size and type shall be divided into groups of 500 brushes or less and each such group shall constitute a lot. Care shall be taken to ensure that brushes included in a lot do not differ in construction, as far as possible.

C-1.1.1 The conformity of the brushes in a lot to the requirements of this specification shall be ascertained for each lot separately. The number of brushes to be selected for this purpose shall be in accordance with col 1 and 2 of Table 2.

C-1.1.2 The brushes shall be selected at random. To ensure randomness of selection, one of the following procedures is recommended for use :

- a) If all the brushes in a lot are packed in one box, then starting from any brush, count them in any suitable order as 1, 2, ..., up to r and so on, where r is the integral part of N/n (N and n being the lot size and sample size respectively). Every r th brush thus counted shall be withdrawn to constitute the sample.

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- b) If the brushes in a lot are packed in more than one box, approximately equal number of brushes shall be picked at random from as many boxes as possible so as to obtain the required number of brushes as specified in Table 2.

TABLE 2 SCALE OF SAMPLING

(Clause C-1.1.1)

No. of BRUSHES IN A LOT			No. of BRUSHES TO BE SELECTED
N			n
(1)			(2)
Up	to	10	2
11	„	25	3
26	„	50	4
51	„	100	5
101	„	150	6
151	„	300	7
301	„	500	8
501	„	750	9
751	„	1000	10

C-2. NUMBER OF TEST

C-2.1 Tests for the characteristics shall be conducted on the individual brushes in the sample.

C-3. CRITERIA FOR CONFORMITY

C-3.1 For declaring the conformity of the lot to the requirements of this specification, all the brushes selected according to C-1.1.2 shall satisfy the relevant requirements given under 5.



INDIAN STANDARDS INSTITUTION

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002
 Telephones : 3 31 01 31, 3 31 13 75 Telegrams : Manaksanst
 (Common to all offices.)

Regional Offices:

Western : Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	Telephone 6 32 92 95
† Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola, CALCUTTA 700054	36 24 99
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